Amendments to the Claims:

This listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

What is claimed is:

1. – 39. (Cancelled)

40. (Currently Amended) ~~The method of claim 38,~~ A method of controlling a queue buffer in a data unit transmission device, the queue buffer being arranged to queue data units in a queue and being connected to a link, the method comprising the steps of:

determining a value (QL; QLav) of a length parameter related to the length of the queue;

comparing the value (QL; QLav) with a length threshold value (Lth);

performing a congestion notification procedure with respect to one or more data units from the queue if the value (QL; QLav) is greater than the length threshold value (Lth);

estimating, by an automatic threshold adaptation procedure, a link capacity value (LC) based on the data rate (DR) of the link and adapting the threshold value (Lth) on the basis of the estimated link capacity value (LC), wherein the automatic threshold adaptation procedure is operable in one of at least a first and a second adaptation mode, the first adaptation mode being associated with minimizing queuing delay and adapting the threshold value (Lth) on the basis of n*LC, where LC represents the estimated link capacity value and n>=1, and the second adaptation mode being associated with maximizing utilization and adapting the threshold value (Lth) on the basis of m*LC, where m > 1 and m > n;

wherein the queue buffer is arranged for receiving data units from a sender that performs window-based flow control and divides its send window by k, k > 1, when receiving a congestion notification or when detecting data unit loss, wherein n=k-1 and m = k^2 – 1; and

further comprising the step of setting the first adaptation mode or the second adaptation mode manually by an operator.

41. (Currently Amended) ~~The method of claim 38~~, A method of controlling a queue buffer in a data unit transmission device, the queue buffer being arranged to queue data units in a queue and being connected to a link, the method comprising the steps of:

determining a value (QL; QLav) of a length parameter related to the length of the queue;

comparing the value (QL; QLav) with a length threshold value (Lth);

performing a congestion notification procedure with respect to one or more data units from the queue if the value (QL; QLav) is greater than the length threshold value (Lth);

estimating, by an automatic threshold adaptation procedure, a link capacity value (LC) based on the data rate (DR) of the link and adapting the threshold value (Lth) on the basis of the estimated link capacity value (LC), wherein the automatic threshold adaptation procedure is operable in one of at least a first and a second adaptation mode, the first adaptation mode being associated with minimizing queuing delay and adapting the threshold value (Lth) on the basis of n*LC, where LC represents the estimated link capacity value and n>=1, and the second adaptation mode being associated with maximizing utilization and adapting the threshold value (Lth) on the basis of m*LC, where m > 1 and m > n;

wherein the queue buffer is arranged for receiving data units from a sender that performs window-based flow control and divides its send window by k, k > 1, when receiving a congestion notification or when detecting data unit loss, wherein n=k-1 and m = k^2 – 1; and

further comprising the step of automatically setting the first adaptation mode or the second adaptation mode using an automatic mode setting procedure.

42. - 57. (Canceled)

58. (Currently Amended) ~~The queue buffer controller of claim 55~~, A queue buffer controller for controlling a queue buffer in a data unit transmission device, the queue buffer being arranged to queue data units in a queue and being connected to a link, comprising:

a queue length determinator for determining a value of a length parameter (QL, QLav) related to the length of the queue, a comparator for comparing the value with a length threshold value (Lth);

a congestion notifier for performing a congestion notification procedure if the value is greater than the length threshold value; and

a threshold adaptor for automatically adapting the length threshold value (Lth) by estimating a link capacity value (LC) based on the data rate (DR) of the link and adapting the length threshold value (Lth) on the basis of the estimated link capacity value, wherein the threshold adaptor is operable in one of at least a first and a second adaptation mode, the first adaptation mode being associated with minimizing queuing delay and adapting the threshold value (Lth) on the basis of n*LC, where LC represents the estimated link capacity value and n>=1, and the second adaptation mode being associated with maximizing utilization and adapting the threshold value (Lth) on the basis of m*LC, where m > 1 and m > n;

further comprising a setting mechanism for the manual setting of the first adaptation mode or the second adaptation mode by an operator.

59. (Previously Presented) ~~The queue buffer controller of claim 55,~~ A queue buffer controller for controlling a queue buffer in a data unit transmission device, the queue buffer being arranged to queue data units in a queue and being connected to a link, comprising:

a queue length determinator for determining a value of a length parameter (QL, QLav) related to the length of the queue, a comparator for comparing the value with a length threshold value (Lth);

a congestion notifier for performing a congestion notification procedure if the value is greater than the length threshold value; and

a threshold adaptor for automatically adapting the length threshold value (Lth) by estimating a link capacity value (LC) based on the data rate (DR) of the link and adapting the length threshold value (Lth) on the basis of the estimated link capacity value, wherein the threshold adaptor is operable in one of at least a first and a second adaptation mode, the first adaptation mode being associated with minimizing queuing delay and adapting the threshold value (Lth) on the basis of n*LC, where LC represents the estimated link capacity value and n>=1, and the second adaptation mode being associated with maximizing utilization and adapting the threshold value (Lth) on the basis of m*LC, where m > 1 and m > n;

further comprising an automatic mode setting mechanism for setting the first adaptation mode or the second adaptation mode automatically.

60. – 72. (Canceled)